

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : H04M 1/02		A2	(11) International Publication Number: WO 98/19435
			(43) International Publication Date: 7 May 1998 (07.05.98)
(21) International Application Number: PCT/US97/20171		haven Lane, San Jose, CA 95121 (US). RICHARD, Alan [US/US]; 20 Melanie Lane, Wrentham, MA 02093 (US). CHERN, Wen-Foo [US/US]; 28 Country Corners, Wayland, MA 01778 (US).	
(22) International Filing Date: 31 October 1997 (31.10.97)			
(30) Priority Data:		(74) Agents: HOOVER, Thomas, O. et al.; Hamilton, Brook, Smith & Reynolds, P.C., Two Militia Drive, Lexington, MA 02173 (US).	
08/741,671	31 October 1996 (31.10.96) US	(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).	
08/766,607	13 December 1996 (13.12.96) US		
08/810,646	3 March 1997 (03.03.97) US		
08/838,420	7 April 1997 (07.04.97) US		
08/853,630	9 May 1997 (09.05.97) US		
08/855,909	14 May 1997 (14.05.97) US		
08/884,485	27 June 1997 (27.06.97) US		
08/942,272	30 September 1997 (30.09.97) US		
(71) Applicant (for all designated States except US): KOPIN CORPORATION [US/US]; 695 Myles Standish Boulevard, Taunton, MA 02780 (US).			
(72) Inventors; and			
(75) Inventors/Applicants (for US only): JACOBSEN, Jeffrey [US/US]; 501 Tevis Trail, Hollister, CA 95023 (US). FAN, John, C., C. [US/US]; 881 West Roxbury Parkway, Chesnut Hill, MA 02167 (US). POMBO, Stephen, A. [US/US]; 976 Harrison Avenue, Campbell, CA 95008 (US). ZAVRACKY, Matthew [US/US]; 20 Grove Street, Plympton, MA 02367 (US). BUMGARDNER, Rodney [US/US]; 3366 Methil-			

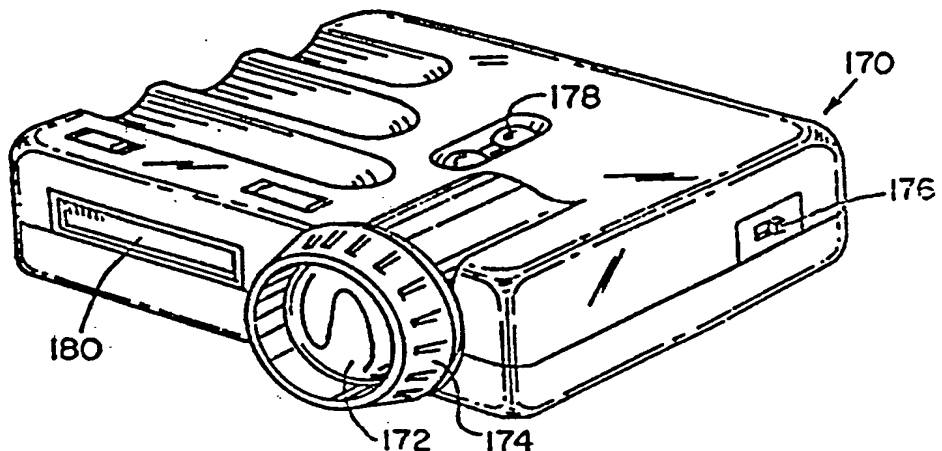
Published

Without international search report and to be republished upon receipt of that report.

(54) Title: MICRODISPLAY FOR PORTABLE COMMUNICATION SYSTEM

(57) Abstract

The invention relates to a microdisplay system that utilizes a small high resolution active matrix liquid crystal display with an illumination system and a magnifying optical system to provide a display for a portable communication device. A handset for the communication system incorporates the display for use as, for example, a wireless telephone or paging device. The small display can provide a high resolution color image at low power thus providing for portable battery powered operation.



PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



66

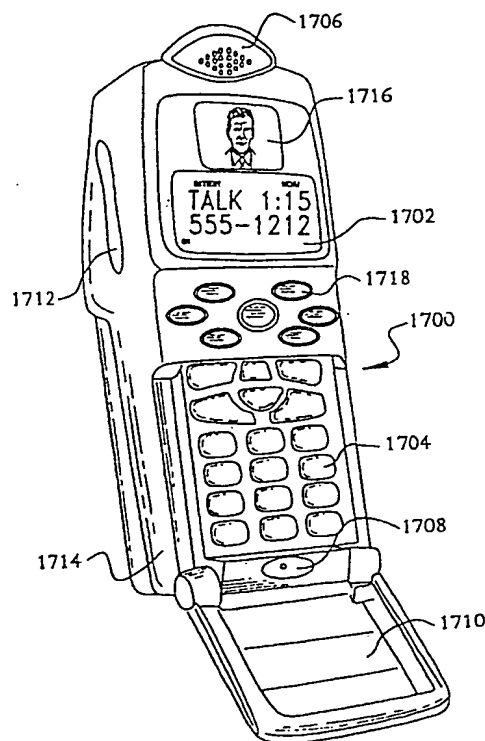
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : G09G 3/36, 3/34, H04N 9/31		A1	(11) International Publication Number: WO 99/23636
			(43) International Publication Date: 14 May 1999 (14.05.99)
(21) International Application Number: PCT/US98/23035			
(22) International Filing Date: 29 October 1998 (29.10.98)			
(30) Priority Data: 08/961,744 31 October 1997 (31.10.97) US 09/004,706 8 January 1998 (08.01.98) US 09/066,061 24 April 1998 (24.04.98) US 09/153,744 15 September 1998 (15.09.98) US			
(71) Applicant (for all designated States except US): KOPIN CORPORATION [US/US]; 695 Myles Standish Boulevard, Taunton, MA 02780 (US).		(74) Agents: HOOVER, Thomas, O. et al.; Hamilton, Brook, Smith & Reynolds, P.C., Two Militia Drive, Lexington, MA 02421 (US).	
(72) Inventors; and (75) Inventors/Applicants (for US only): ZAVRACKY, Matthew [US/US]; 2 Grove Street, Plympton, MA 02367 (US). JACOBSEN, Jeffrey [US/US]; 501 Tevis Trail, Hollister, CA 95023 (US). HERRMAN, Frederick, P. [US/US]; 20 Orchard Hill Drive, Sharon, MA 02067 (US). CHERN, Wen-Foo [US/US]; 28 County Corners, Wayland, MA 02184 (US). ONG, Hiap, L. [US/US]; 3 FL., #179 Sec. 2, King-Shan South Road, Taipei, Taiwan ROC 106 (TW). FAN, John, C., C. [US/US]; 881 West Roxbury Parkway, Chestnut Hill, MA 02167 (US). TSAUR, Bor-Yeu [US/US]; 610 Waltham Street, Lexington, MA 02421		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
		Published With international search report.	

(54) Title: COLOR SEQUENTIAL LIQUID CRYSTAL MICRODISPLAY WITH THIN GAP AND METHOD OF DRIVING THE SAME

(57) Abstract

An active matrix color sequential liquid crystal display has an active matrix circuit, a counterelectrode panel and an interposed layer of liquid crystal. The active matrix display is located in a portable microdisplay system that has a display computer that generates images to be displayed on the liquid crystal display and connected to the active matrix liquid crystal display. A data link transmits data at a rate of speed of greater than 200 Mbytes per second in series for at least a portion between the display computer and the active matrix liquid crystal display. In a preferred embodiment, the display system has a randomizing device that alternates the amplifier through which an analog video signal passes. In another embodiment, the display system comprises three LEDs of different colors which are sequentially flashed during each frame. After each flashing step, the pixel electrodes are initialized to a set voltage.





C1

INVESTOR IN PEOPLE

Application No: GB 0021866.9
Claims searched: 1-28

Examiner: Eleanor Thurston
Date of search: 21 February 2001

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.S): H4J (JK)

Int Cl (Ed.7): H04M 1/02

Other: Online: EPODOC, WPI, PAJ

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	GB 2343324 A (LEE et al)	
A	GB 2338579 A (WOLF et al)	
A	EP 0539699 A2 (SONG)	
A	US 5414444 A (BRITZ)	

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.